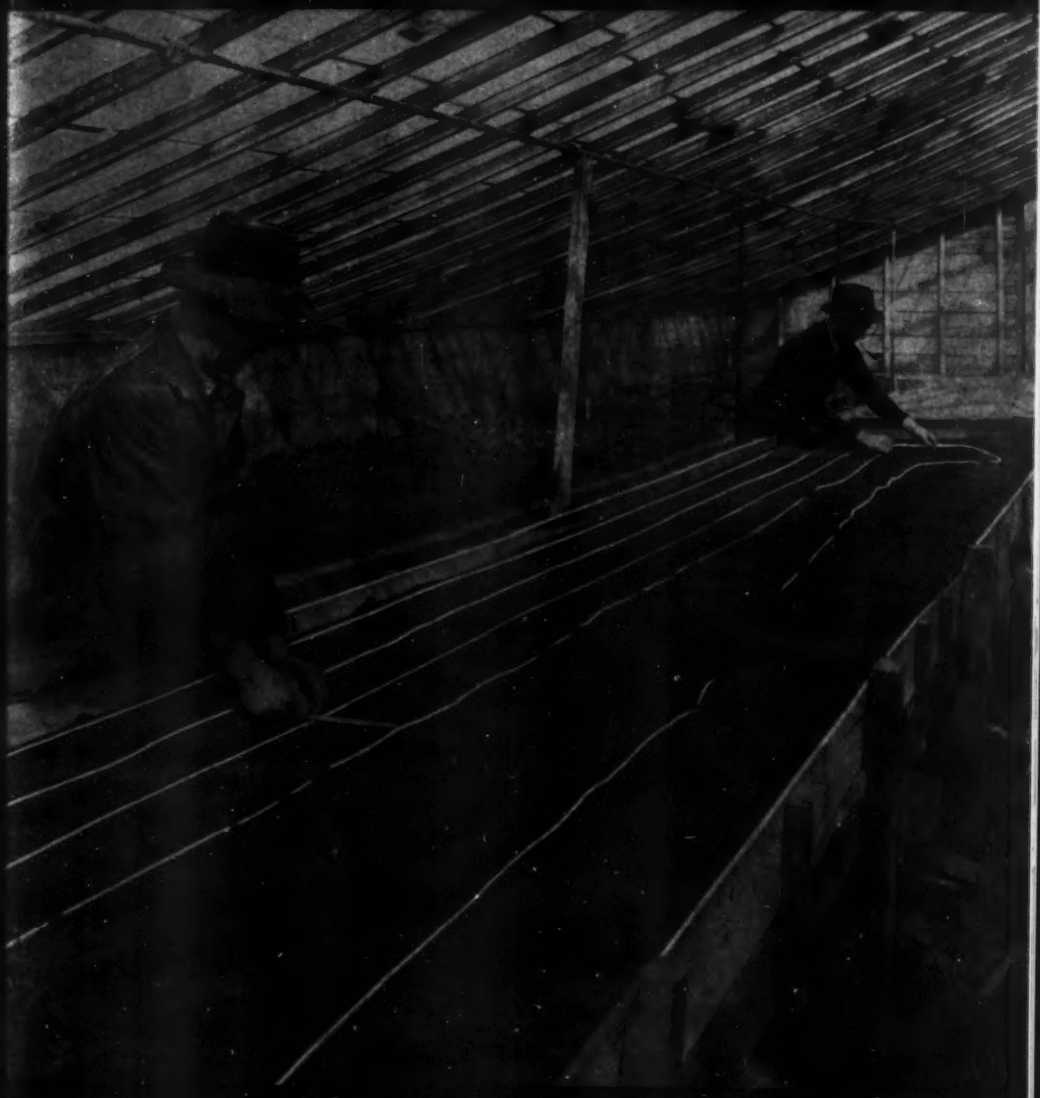
Electricity on the Farm

LIB
FEB 9
ON

A MONTHLY MAGAZINE FOR THE UP-TO-DATE RURAL FAMILY



In This Issue

FEBRUARY 1938

WE HAVE FOUND OUT HOW TO LIVE—GOOD WATER FOR THE FARM PUMP — SUNSHINE AT NIGHT — ELECTRICAL HOUSEKEEPING — AND MANY OTHER MONEY-MAKING IDEAS

GET A "G-E"
YOUR BEST GUARANTEE

Look for this trademark on each lamp you buy. They stay brighter longer

Delicious, crisp, golden brown toast every time — automatically. Clear rich-flavored coffee, made at the table. Ask about General Electric toasters and coffee makers

G-E Farm Wiring provides a pathway of power for every electrical need — now and in the future. It assures lasting comfort, convenience, and economy

The famous G-E flatplate ironer has been the choice of thousands of housewives, because it is so easy to operate. There are also the G-E rotary ironer and the hand irons

Here is a small, compact, soil-heating kit that stimulates plant growth, saves time, and is easy to install and operate

"BEFORE" and "AFTER" modern light for seeing replaced oil lamps at low cost on this General Electric field-test farm

Get MORE LIGHT At No Extra Cost With New, Brighter G-E MAZDA Lamps —

ADEQUATE lighting should come first when you electrify your farm, because it not only brings you actual dollars-and-cents profits but protects your health. Electric light is clean, safe, and always ready. It eliminates the fire hazard that goes with other methods of lighting; it discourages theft; it is being used to increase production of farm animals and plants. But perhaps of greatest importance is the fact that electric light protects your eyes—better light means better sight.

Be sure you get all the light you pay for . . . by using the new, bri MAZDA lamps made by G Electric. Improvements withi last twelve months actually these lamps brighter than eve fore and make them *stay bri longer*. In the 60-watt lamp, f ample, a new high-efficiency fil provides 10 per cent more light the same-sized lamp of a yea

Write today for a new free 2 booklet, crammed with valua formation on how to get good ing for all purposes on your Use coupon below.

GENERAL ELECTRIC

98-7

General Electric, Rural Electrification Section,
Room 622-U, Schenectady, N. Y.

Please send illustrated booklet on farm lighting.

Name..... RFD.....

P. O..... State.....

YOU CAN AFFORD RUNNING WATER . . . .

Goulds CID Water Supply System for shallow wells.

Your nearest Goulds distributor can tell you just what size system you need and what it will cost—at no obligation to you. Write us for his name and address.

For as little as three cents a day you can have running water in your home—supplied by a dependable Goulds CID Water System. An ample supply for watering live-stock and poultry, for irrigation, stall washing and fire protection costs but a few cents more.

Substantial labor savings and increased production have paid quickly for installation and operation of a Goulds CID Water System on many a farm.

The 89 years' experience of Goulds—the world's largest pump manufacturer—insures dependability and economy of operation.

GOULDS

RUNNING WATER

YOUR FAMILY DESERVES IT

GOULDS PUMPS, Inc.
340 Fall St.
Seneca Falls, N. Y.

Please send me the name of the nearest Goulds Distributor. I am interested in a pump for ☐ deep well ☐ shallow well service.

Name .....

Street or R.F.D. .....

Place ..... State .....

8107

Editor's Chat

MOTHER'S QUILT

It's beautiful!

The pattern is intricate and the thousands of stitches are every one perfect. But the general effect is one of simplicity and master craftsmanship.

Mother was proud of that quilt. Many an hour she worked over it, and each one was an hour of pleasure. I can see her yet, planning, working out the design, setting up the quilting frame, and sewing,—sewing, —sewing. Friends who came to our home got pleasure and inspiration out of that quilt, too. A number of ladies have copied the pattern and now have beautiful quilts of their own. While mother's thought was only of a beautiful and useful quilt for her home, she had flattering offers for her handiwork after it had won prizes at the fairs.

Now it's our heirloom. It is valuable in dollars, and valuable beyond dollars. Around it mother's memory still lives.

A farm is like that.

—Planning, working out the design, setting up the machinery, and sowing, reaping, milking. Thousands of steps! Pleasure? Pride? Value? Heritage?

Farms like quilts may be valuable, beautiful, satisfying. Or they may just be covers, then rags, then forgotten. It's the "stitches."

WATER

What is more desirable than water,—good water, plenty of water, water conveniently piped for use, for house, for barn, for hens?

More than once we have said that electricity has no value in itself. It has value when it brings you running water. Running water is not just an electric pump. It is wells, springs, cisterns, sanitation, pumps, plumbing and waste disposal. Like electricity, running water is of little value if it just runs. It is valuable when it is used; and use means pipes, sinks, bathtubs, toilets and septic tanks. You'll have an opportunity to read more about them from the practical farm standpoint during the coming year.

25 YEARS OLD

The New Jersey Extension Service is celebrating its twenty-fifth birthday.

During this quarter of a century, through the aid of the educational work of the Extension Service, the value of crops and livestock products in New Jersey have increased from $33.71 to $54.60 per acre. While the number of farms has decreased about 12 per cent, the value of products per farm has increased from $1,815 to $2,550.

But we are more interested in New Jersey's program of rural electrification through the Extension Service. Since 1928 Mr. W. C. Krueger has been on the staff devoting part or full time to farm electrification. In addition to his educational work he has acted as liaison representative between farmers and power companies. The Joint Committee on Rural Electrification established in 1928 continues active, the meetings serving as a clearing place for problems of rural electrification affecting farmers and industry. A fine cooperative relationship exists in the State between representatives of the Grange, Farm Bureau, Experiment Station, State Department of Agriculture, Extension Service, and power companies supplying farms.

This is also the 25th anniversary of Director H. J. Baker's connection with extension work. His able but modest help and guidance have made him beloved by staff and state.

Our hat is off to New Jersey's Extension Service and its Director.

GEO. W. KABLE.

——I'm Proud I Am a Farmer——

February, 1938 **ELECTRICITY ON THE FARM** **Vol. II, No. 2**

Issued Monthly by

CASE-SHEPPERD-MANN PUBLISHING CORP.

Editorial-Executive Offices: 24 West 40th Street, New York

GEORGE W. KABLE, *Editor;* KARL M. MANN, *President;* FRED SHEPPERD, *Editorial Director;* I. H. CASE, *Vice-Pres. and Gen'l Mgr.;* K. H. GORHAM, *Advertising Manager;* H. S. ESSEX, *Production Manager.* CHICAGO: 6 No. Michigan Ave.—W. S. CLEVENGER, Western Manager; L. M. ROCHE, Western Representative. SAN FRANCISCO: 444 Market St., Room 305—C. H. WOOLLEY. Subscription price, 75 cents per year; single copies, 10 cents; Special Bulk Rates on Application. *Contents Copyrighted 1938 by Case-Shepperd-Mann Pub. Corp.*

This is the Kerkhoff farmstead, where electricity has made a big change in living.

WE HAVE FOUND OUT
HOW TO LIVE

A Ten Dollar Monthly Minimum Bill and an Account Book Taught Us

By JOSEPH KERKHOFF

Mr. Kerkhoff is a —— —— farmer on Route 4, Lafayette, Indiana. Read the story and fill the blanks yourself.

WE'RE just ordinary farm folks. Mrs. Kerkhoff, Reid 12, Quentin 14, and myself operate a general farm of 255 acres in Tippecanoe county. We keep 26 mature cows, 20 of which are in milk, 18 heifers, of various ages, and 50 hogs. Like most farmers we have to "make it" off the farm. That means watching expenses and keeping them below our income. At the same time, we only live once and we are trying to enjoy life while we farm.

For a number of years we have wanted electric service. Our farm was nearly a mile from the power line. The power company agreed to build the line to us if we would guarantee to use $10 worth of electricity each month for five years. An extra $10 per month was too much to spend just for the pleasure of having electric service; but we really wanted it. Since we could not afford an extra $10, we got to figuring how we might use electricity to save $10 that we were spending for something else.

We keep farm records. During 1935 we used an average of 96c worth of coal-oil and gasoline per month in our lamps and lanterns. Electricity would save that. Then we operated our milking machine and water pump with a gasoline engine. The account book told us we had spent $91.21 for operating this engine in 1935. The way we spent it is shown in the accompanying cost statement.

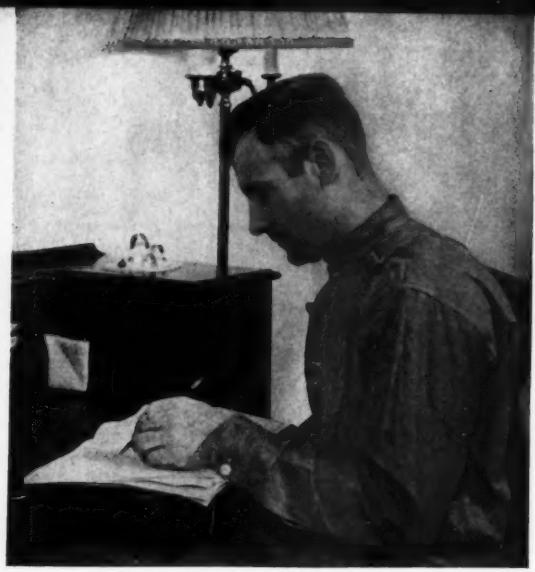
That $91.21 per year made another $7.60 per month to go in the savings column. And that did not include the $34 it cost to have the engine fixed up the year the hired man let it freeze. He was a good hired man, too.

Another place where we were spending money was in having our feed ground. A custom mill came to the farm once a week. One or two of us helped with the work. We paid 10c per hundred pounds for grinding and 2c per bushel for shelling corn. No one can afford to do it for that. The man who tried it is out of business now. When his outfit wore out, he was done. But it cost us $90.48 for shelling and grinding in 1935, or $7.55 per month.

Cost of Operating Engine During 1935

General overhaul (engine was 3 years old)	$14.25
Mechanic twice when engine was balky	2.25
Minor repairs	3.25
Oil	3.00
Gasoline	68.46
Total for year	$91.21

Oil and gasoline for lamps	$ .96
Milking	7.60
Feed grinding and shelling	7.55
Monthly cost	$16.11



"We keep farm records." There was no guesswork in the "cost before" or the profit from the use of electricity. It is in the book.

We figured that if we could do the grinding within the $10 minimum for electricity we could pay the cost of the additional equipment out of savings and be $170 ahead in five years.

We signed the contract for the line.

Monthly Minimum Forgotten

Our service has been installed now for a little more than two years. In 1936 we paid a total of $120.40 for electricity, or just 3c more than $10 per month. The saving was $6.08 per month over what we were paying to do the same jobs without electricity. Of course we were using electricity for a lot of other things too.

But that is only part of the story. We have a step block rate, where the unit cost drops down with increased use of electricity.

Everything we used over 200 kw. hrs. we got at 2½ per kilowatt-hour. Now there are quite a few things that we can afford to use electricity for at 2½c per kilowatt-hour that were a little questionable at 7½c or 5c. Still better, we found that if we installed a water heater, we could buy all of our power over 200 kilowatt-hours at an even lower rate. We put in the water heater this year. Instead of 276 kilowatt-hours we are now getting 346 for $10. We have stopped worrying about that $10 minimum that we guaranteed and we are doing our figuring on how we can get the most electricity out of the power company for the least cost. At present we are using electricity for lights, an iron, a washing machine, a vacuum sweeper, a radio, a toaster a refrigerator, a range, a 30-gallon electric water heater, an automatic water system, milking machine, feed grinder, corn sheller and brooder.

In 1936 when we were saving the $6 per month our total investment in wiring and equipment was $449. Our wiring cost about $134; the 7½ h.p. motor and the sheller and grinder $330; and we

Left: Electricity for this brooder cost $4.25 in 1937. For a similar brood with the coal brooder, the fuel cost about $7.00. But the big saving was in Mrs. Kerkhoff's labor. **Right:** "We have stopped worrying about the $10 minimum that we guaranteed and we are doing our figuring on how we can get the most electricity from the power company at the least cost."

This is the new kitchen — just completed. Light, cheerful, easy to keep clean. Note the light and oven time switch over the range.

sold the four-year-old milking machine engine for $15 more than it cost to buy a new ¾ horsepower motor to replace it.

5 H.P. Motor Ample

When we installed the grinding equipment, I wanted a 10-horse-power motor. Prof. Hienton of Purdue said 5 horse-power would be ample. We compromised on 7½. I agree now that the 5 horse-power size would have been plently large. Incidentally, I have found that the University is a good place to go for information. They don't have anything to sell, and the information I have obtained has been most helpful.

You might think that it is taking more time for us to grind feed now than it did formerly, but it isn't. In 1935 we had to get the corn and oats on the wagon and be ready for the grinder when it arrived. If the outfit was on time, it took a half day; but it wasn't always on time. In 1936 with our own equipment, it took about an hour to haul a load of ear corn and shovel it through the sheller. We use the blower on the sheller for elevating other grains as well as shelled corn into overhead bins from which it is spouted down to the mill for grinding. It takes very little time to do the grinding. The mill runs while we are doing other chores. It is less labor, too, for we handle the feed less.

In 1937 we started using the electric brooder. The current used cost $4.25. The fuel used for one brood in the coal brooder cost about $7.00; but the big saving was in Mrs. Kerkhoff's labor. Yes she runs the brooders.

Boys Like the Farm

We kept a hired man in 1935 and 1936, but when he got another job last year, we decided to "go it" alone. It is more pleasant to have your home to yourself anyway. The boys have always helped with the work. I used to tell them "get me this" or "get me that." They did not like that kind of aimless helping. Now the smallest boy can do the grinding. Occasionally he blows a fuse, but I am glad to have him blow it. The motor is protected by the fuse, as well as an overload switch, and the boys are learning something. The boys enjoy working together. The two of them can do as much as a hired man. It is no trouble to get them to work with the electrical equipment. They like it. Then they are growing up with it and what they learn now is going to be worth something to them later.

Most of what I have told you has been about money saved or money made through the use of electricity. We do watch the dollars. But the dollars are only a small part of the satisfaction of our electric service. Our whole family is more interested in farming. It means something more to us now than just a living. It has stimulated the desire for other improvements which we are making; and we don't intend to stop.

We plan to have electricity do two things for us: to help us do our work more easily and more efficiently, and to make possible a more complete and happier home life.

To make still better use of electricity we have remodeled our house. We installed two automatic water systems, an electric range, an electric water heater, a refrigerator and a bath room. The basement was enlarged to provide space for a laundry room. Both the kitchen and laundry room being piped for hot and cold soft water are certainly reducing the work of everyday tasks in the household. We cannot say too much for the automatic water systems and the water heater. The hot and cold soft water and the cold well water, available at the turn of a faucet whenever needed, are a real contribution to our home life.

After our own experience I cannot keep from hoping that some way will be found for every farm to have electric service, and that farmers will not think of electricity as a luxury, but rather as a real aid and inspiration in the farm business. The $10 looked pretty big to us at first, but we are glad now for that minimum bill. We have found out how to live.

EDITOR'S NOTE. *Mr. Kerkhoff's family was picture on the cover of last February's* ELECTRICITY ON THE FARM *and there was a short story about them on page 7. Their further improvement in farm life through the use of electricity has been so interesting that we take real pleasure in presenting this continuation of the story.*

Fine Hens! A well located cistern. But how about the water? A concrete curb and platform would help prevent contamination.

GOOD WATER for the FARM PUMP

Good and Bad Feature of Springs, Wells and Cisterns as Sources of Water Supply

By B. A. JENNINGS

Mr. Jennings is Asst. Prof. of Agricultural Engineering Extension at Cornell University, Ithaca, N. Y.

THE water supply for the farm and home should be wholesome, adequate and convenient. A wholesome water supply is odorless, clear, free of objectionable chemicals and free of disease-producing bacteria. Water from any new source should be tested by a city or county health officer before being used. If one is not certain of the purity of the supply, home chlorinators can be purchased, and when correctly used are claimed to make the water safe. The water should be adequate during all of the seasons of the year.

On many farms there may be several sources of water available. For example, there may be a spring on the hillside, or a shallow well near the barn or a cistern in the house. The problem in this case is which supply to use. On another farm the problem may be entirely different. There it may be the lack of a satisfactory supply and the problem then is, should one dig a well, drive a well, drill a well, look for a spring or build a cistern. Since each of these types of water supply have certain advantages and disadvantages, these should be taken into consideration when planning the farm water supply system.

There are several possible mistakes which should be avoided when developing a water supply. The notion commonly prevails that spring water is always good water. This is not true. In fact, some of the most dangerous water comes from springs in drainage courses which are not protected from surface contamination, or which derive their flow from shallow seepage in the soil. Another mistaken idea is that water which tastes good, is good. Be careful. Just remember that disease germs may have no taste.

A Kentucky farmer recently related that he used water from a spring at the bottom of a hill throughout the greater part of the year, but when the spring water "got bad" he used the cistern water at the house. When asked how he knew the spring water was bad, he said that was easy because all his kids got the dysentery.

A third mistake to avoid is too small a supply. This applies particularly to cisterns and the depth of dug wells. The cistern that was adequate with the old hand pump and bucket is likely to go dry quickly when a convenient running water system is installed because of the increased use of water. And that is what a water system is for,—to save labor, and improve living conditions and health through a *plentiful supply* of good, running water conveniently disposed for use.

All of our water comes from rain. Some of it runs off on the surface of the ground to creeks and rivers. A part soaks into the ground and gradually travels to a lower level. Layers of impervious clay or streaks of gravel or formation of rock, change the direction of this flow of water.

There are four things which should be noted concerning ground water:

First, the water in the soil will be above and will follow impervious layers of either clay or rock.

Second, water in the upper soil will travel to a lower level and often but not always in the direction of the general slope of the land. This is important in the selection of the water supply because one must take into consideration the dangers of pollution from surface drainage, from cesspools, outhouses and barnyards.

Third, springs, shallow wells, deep wells and artesian wells are similar sources of water, varying only as to the depth of the water below the surface of the ground.

Fourth, in most regions, somewhere below the surface of the ground, water can be obtained if a well is drilled deeply enough.

Wet and Dry Springs

A spring is water following down an impervious layer, which may be rock or clay, to a place where this layer is near or at the ground surface. If the area and depth of soil above the impervious layer is small, the spring will be known as a "wet weather" spring and will supply water for a part of the year only. Such a spring might be at "A" in the accompanying sketch. This is entirely different from spring "B", which is supplied from a large water-holding area. In this case, there is a larger reservoir in the soil to hold water between rains and such a spring will furnish an adequate year around supply. This supply is more likely to be pure and will be satisfactory provided it is convenient to the buildings. If this spring is high enough above the buildings, water can be piped directly to the house. If the spring is located below the level of the house, a pump or a ram can be installed to force the water to the buildings. The advantages of having a spring located above the house are:

One, there is little likelihood of poilution from the farm buildings;

Two, the problem of sewage disposal is simplified;

Three, the problem of installing running water in the buildings is minimized.

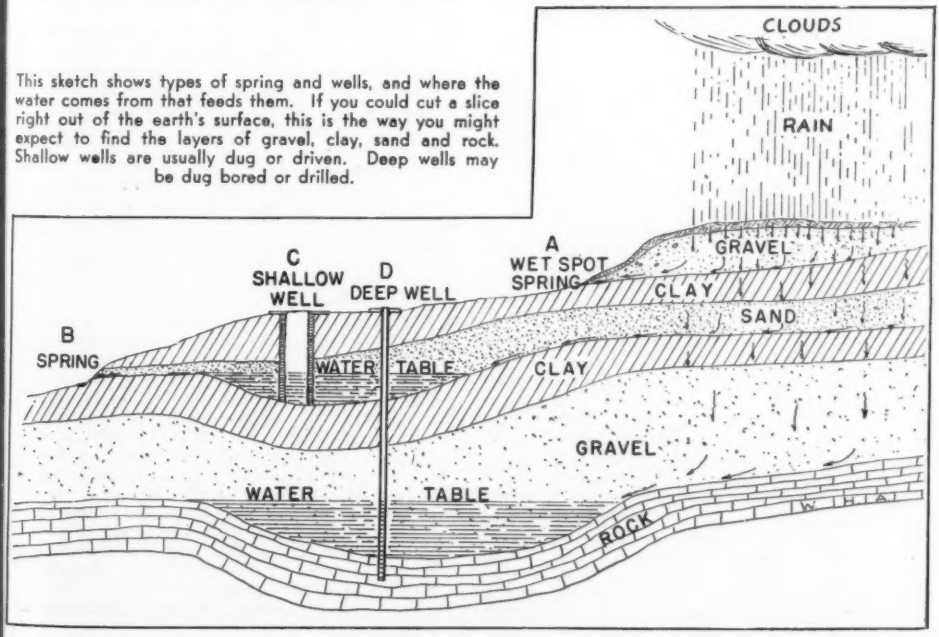
The disadvantage of springs is that many of them are located so far from the house that the cost of pipe and of laying it will more than offset the cost of installing a pump at some other source of supply.

A shallow well may be either driven or dug, but usually we find the dug well more commonly used. The sides of the well are usually laid up with field stone. The advantages of shallow wells are that they are relatively cheap and simple to construct. The pump does not necessarily have to be placed over the well, but can be located in a nearby building where it will be protected from freezing. The cost of the pump is also comparatively low. The disadvantage is that since they are comparatively shallow, there is more danger of pollution from surrounding territory. The shallow well should be located above the sources of contamination or at least to one side as far as possible. For a dug well, the upper 6 feet should be laid up with mortar to prevent any surface water from running or soaking into the well. To further protect the well, a concrete platform should be placed over it. Every well has a certain definite rate of flow. With the dug well, which is rather wide and has considerable storage space, we depend on the amount of water stored in the well for each pumping and not entirely on the rate of flow into the well.

In drilled or driven wells we depend on the flow of water into the well for our supply and not on the amount stored in the pipe or casing. This fact, together with the height to which the water rises

(*Continued on page* 31)

This sketch shows types of spring and wells, and where the water comes from that feeds them. If you could cut a slice right out of the earth's surface, this is the way you might expect to find the layers of gravel, clay, sand and rock. Shallow wells are usually dug or driven. Deep wells may be dug bored or drilled.



This is an S-1 lamp installed over the feed hopper in a farm poultry plant. The special transformer is in the cylindrical enclosure above the reflector.

SUNSHINE AT NIGHT

Ultra-Violet Lamps Help to Increase Profits in the Poultry Business

By FRANK J. G. DUCK

Mr. Duck is an electrical engineer and a student of the profitable application of electrical equipment to farming.

SCIENCE has invaded the hen house. It is no longer possible for the "rule-of-thumb" poultryman to compete successfully with the fellow who is "on his toes" and uses the latest developments in production and management. Poultry raising—once a backyard side line—is today one of the big income producers in farming. Lighting is one of the scientific developments which helps to make it profitable.

The primary object of poultry lighting is to obtain heavy egg production at the time prices are highest, that is, during the fall and winter months. However, the good poultryman whose principal income is derived from his flock will recognize other advantages of lighting. These include vitamin D content of the eggs (which frequently command a premium), higher percentage of fertile eggs, increased hatchability, greater shell strength, the elimination of rickets, reduction of mortality, more rapid growth of baby chicks, larger and stronger pullets, greater resistance to disease, and more rapid recovery from such afflictions as colds and roup.

Sunshine is nature's method of supplying vitamin D for man and animal. Sunlight contains certain invisible ultra-violet rays, which act on a substance (ergosterol) near the surface of the skin and by chemical change produce vitamin D in the blood stream of the fowl or animal. This aids in the assimilation of calcium and phosphorous, which in turn builds strong bodies and resistance to disease. When the hen has an ample supply of vitamin D, enough of it is carried in the egg yolk to give the baby chick a good start. To keep the chick growing vigorously, this vitamin D reserve should be replenished.

Where poultry is permitted to run outdoors, natural sunlight is sufficient during the late spring, summer and early autumn to supply the needed vitamin D. Since most chicks raised for egg production are hatched in late winter or early spring they are kept indoors and do not get this beneficial sunlight. Even the use of special glass or glass substitutes which permit the passage of ultra-violet rays does not satisfactorily solve the problem because, during winter and early spring there is not only less sunshine but also much less ultra-violet in the sunlight which is available.

This deficiency in vitamin D must be offset by artificial means, especially where high production methods are employed and the flock is kept indoors. Ordinary artificial lights yield no ultra-violet rays, but the so-called "sun lamps" and the more recent CX lamps offer an excellent solution to the problem.

Use S-1 and CX Lamps

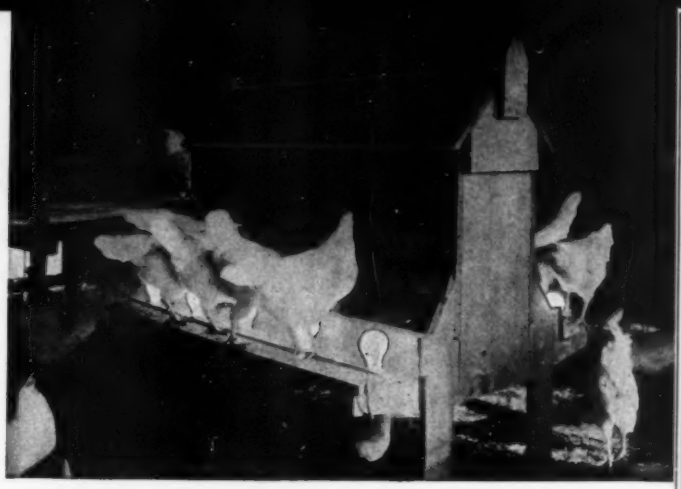
Sun-lamps are given that name because they have been designed to produce light and ultra-violet radiations of about the same quality as sunlight. The lamps come with a small transformer built into a special reflector and must be used in this combination as a unit. The lamp unit known as the S-1 uses 400 watts and produces the maximum amount of ultra-violet of any of the lamps recommended for poultry use. The cost of the complete unit is about $45. One lamp will irradiate 100 hens.

CX lamps may be used on the regular 110-120 volt lighting circuit without a transformer. These lamps are made in 500 and 250 watt sizes and may be purchased complete with reflector for $10 to $15. The 500 watt unit produces about one-fourth as much ultra-violet as the S-1 lamp. The 250 watt lamp produces only one-eight as much ultra-violet as the S-1. These lamps will cover 85 to 100 hens. When using CX lamps, the period of daily exposure will need to be four and eight times that of the S-1 lamp.

CX lamps are also made in 60 watt sizes. They produce only a small amount of ultra-violet but are effective when placed close to the chicks, as when used under the hover of an electric brooder.

All reflectors for ultra-violet lamps should be made of aluminum. White porcelain does not reflect the ultra-violet rays effectively. It is also highly important that CX lamps be used at the voltage for which they were designed as the ultra-violet produced drops off rapidly with decreases in voltage. Lamps and reflectors should be cleaned frequently.

Special instructions for the use of the lamps may be obtained from the manufacturers. In general



Right: Ultra-violet is most effective on the legs and heads of hens. This installation of 60 watt CX lamps in an aluminum trough reflector under the mash hopper is on the farm of John Miller, Kewanee, Illinois.

Lower Left: S-1 lamps over the feed hopper at the Case and Elling farm at Concordia, Missouri. Production was stepped up from 20% to 67% in two months with these lamps, while in a similar house equipped with Mazda lamps, the increase was from 20% to 48%.

Lower Right: A combination of CX lamps (in reflectors) and ordinary Mazda lamps. This is sometimes done where illumination in the house is needed for a longer period than is necessary for ultra-violet irradiation.

they should be placed about 36 inches above the feed hoppers. The daily irradiation with the S-1 lamp should be about one hour. CX lamps would be used for four or eight times this long. Some users have found that it is best to start with short periods of irradiation and build up gradually to the time stated to avoid sudden stimulation of the birds.

So far as ultra-violet benefit is concerned, it makes no difference whether these lamps are burned continuously for a single period or divided into two periods during morning and evening feedings. It is good practice, however, to use them to lengthen the birds' working day, as may be desired.

Ultra-violet lamps may be manually operated or may be controlled and dimmed by spring-driven or electric time switches.

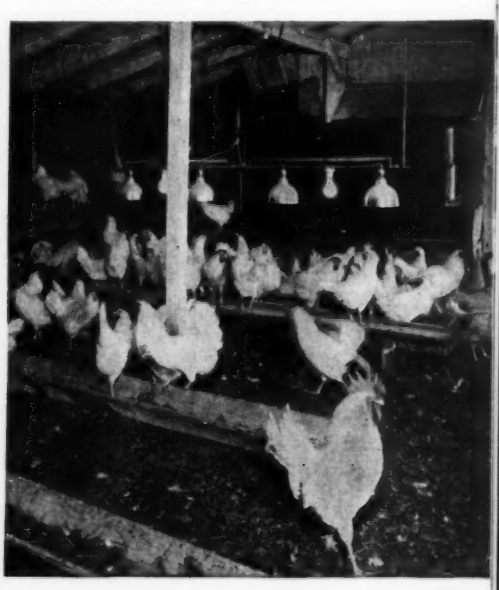
Farm Proof in Missouri

Some accurate records of the benefits of ultra-violet light were made at the Case & Elling Farm at Concordia, Lafayette County, Missouri. A flock of 360 pullets (which had not yet come into normal production) was divided into two equal groups on November 1, and given identical care, ventilation, food and water in a two-section hen house of modern design and construction. The egg production of each flock was carefully checked from November 1 to January 1. During that 60-day period, the average number of eggs from each group was as nearly the same as is possible from two similar flocks and averaged 36 eggs per day or a production of 20 per cent.

Beginning January 1, one flock was exposed from 5:30 to 7:30 a.m. each day to irradiation from two large sun lamps suspended four feet above and on either side of the food hopper. Ordinary Mazda lamps were used on the other flock during the same hours, thus giving each group the same length of working day.

At the end of the first week, 25% of the treated

(*Continued on page 32*)



Growing good turkeys is a business on the Grove farm. Are they proud?

POULTS DO REQUIRE

EXPERT BROODING

New Auxiliary Floor Heating Helps

By M. S. SHOOP

M. S. Shoop—Sh—! She's a Miss, and her job is to tell farm folks in the highly electrified area in Southern California how to make better use of electricity. She is with the Southern California Edison Co.

WHEN I was a child, I used to spend my summers on the rolling Virginia farm owned by my grandparents. Like other farm families, they raised a few turkeys for the market, and the first lesson I learned about farming was that baby turkeys must be protected from dampness and cold. We children proved our worth in this regard when a storm threatened. With the sky darkening above us and our hearts beating fast with excitement, we would scamper through the orchard and pasture, searching for the flocks and hurrying them back to the warmth and dryness of the laying houses before the storm broke.

Many changes in the way of raising turkeys have come in the years which have passed since I used to chase them to shelter. Scientific methods and electric equipment are modern improvements which, by taking much of the chance out of the business, have increased the farmer's expectation of profit. Even the most recent of these developments, however, are based on the same truth I learned in childhood on my grandfather's farm: That turkeys are subject to extremes of temperature and environment which do not affect hardier birds as greatly, and extreme care must be taken if the scrawny poults are to grow into big fat hens and gobblers.

Because of demonstrated success, electric hover brooders have been accepted as one of the best means of brooding poultry. The heat provided is adequate and healthful. The cleanliness and safety of electric heat, and its adaptability to automatic control, are added advantages. And with the birds going to and from the heated portion into the outer section at will, an environment very close to Nature's plan is furnished.

Heating the brooder floor is a new development which adds other advantages to electric hover brooding. This feature is used with success at the G. Grove Prikett ranch near Moorpark, Calif., one of the largest turkey farms in the state. More than 3,000 turkeys are raised each year at this large ranch and are shipped as meat birds to all parts of the United States.

The sand floor of the brooder is laid with electric soil heating cable whose operation is regulated by a thermostat. The warm floor promotes sanitation by insuring dry footing. It also eliminates the crowding which sometimes occurs at various points under the brooder. This floor heating is entirely separate and in addition to the regular

Electric brooder arranged for brooding poults on the G. G. Prikett farm. The soil heating cable seen in the frame under the hover will be covered with two inches of sand. The little box at the left front corner of the frame is the soil heating thermostat which controls the temperature of the sand.

operation of the brooder, except that it reduces the power used by the brooder.

The floor is prepared by first laying a sheet of tar paper to keep out moisture. Next, three inches of sand are placed on the paper in a boarded enclosure. Seventy-five feet of soil heating cable then is laid in loops about six inches apart. (It is essential that the cable be 75 feet in length to prevent it getting too hot.) Two inches of sand covering the cable are added to complete the brooder floor. The cable is connected to a thermostat which keeps the temperature constantly at 70 degrees.

"The brooding mortality of my flock is so low that I seldom tell it because people won't believe me," said Mr. Prikett. "I give a large amount of the credit to electric brooding equipment, which has proved a success in every way."

——I'm Proud I Am a Farmer——

A CARE-FREE STOCK TANK HEATER

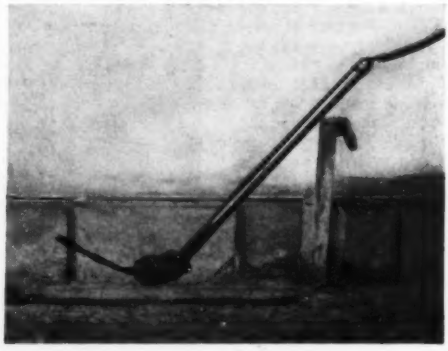
By HOBART BERESFORD

ELECTRIC heat for stock tank water is not a new idea. Observations of this practice throughout a number of years has brought to light some of the factors that may contribute to the success and satisfaction of the application. Many water heating trials have indicated that so long as dairy cattle have plenty of drinkable water the temperature has little influence on the milk production, providing feed and shelter protection permits the animals to make up for the heat needed to warm the water consumed. Successful dairymen agree that cows must drink plenty of water if high production is to be sceured during the cold weather.

Mr. Beresford is Head of the Department of Agricultural Engineering, University of Idaho, Moscow, Idaho.

The electric heater has the advantage of being automatic in operation when a thermostat is used. It requires a very small amount of attention and reduces the chopping and removal of ice that frequently occurs when other types of heaters are used. For most of the electric heater installations in stock tanks, the tanks are insulated with a blanket of straw held in place by woven wire or boards. In some cases the size of tanks have been reduced for the purpose of cutting down on the amount of water that is exposed to the cold weather and for taking advantage of the tempering effect of the flow of water through the tank when the supply is under pressure. A 250 or 300 gallon tank is ample for a 15 to 20 cow herd. In general much smaller tanks are used. Such tanks should be fitted with a float control so that there will be no danger of the tank being emptied and the stock being deprived of their water supply. On the exposed tanks a hinged cover should be provided

(*Continued on page* 30)



The thing that looks like a wire at the lower end of this pipe is the immersion electric heater. The pipe and fittings are used to support the heater and carry the wires up through the water. It is standard 2-inch pipe.

ELECTRICAL HOUSEKEEPING

Conducted by GAIL MEREDITH

DIALING FOR DINNER

IF you'll just stop a minute, I'd like to show you what a lot of ways there are to free not only your hands and feet, but your thoughts as well, from constant attention to the job of getting meals.

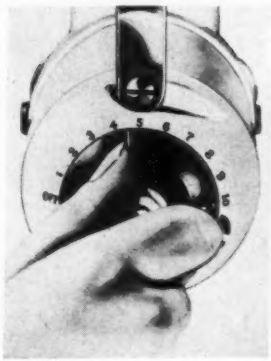
It is a small matter, but it eases the morning flurry to fill the electric tea kettle, plug it in, and stop thinking about the hot water for cocoa or for coffee until that tea kettle whistles for you to come and pour the water. It is on the boil.

Automatic toasters toast the bread light or dark or middling, whatever you folks like, and they will do it without your watching them. You put the toast in. When it is done, it pops up like a Jack-in-the-box and you can't forget it.

A control on your coffee maker will keep the water just below boiling so you can have a perfect brew even though you forgot to watch it.

I sound as though a modern kitchen were a paradise for the absent minded, don't I? I don't mean that, for we do have to have our wits about us, in using modern tools. Take the mixer, for instance. If you want to cream the fat for shortening very, very slowly, you can set the pointer to one. Or, for a frosting that needs a brisk beating, you can move the pointer round the dial to Seven or Eight. You probably can't cream shortening too much, but you can overbeat eggs, or cream, or frostings, too, unless you, or something else minds the time.

When you want to freeze a dessert in your electric refrigerator, you mix it up, turn it into the trays, slide the trays into the chilling unit, and turn the knob to COLDER.



These figures on the back of the mixer indicate any speed you may want.

Easy and simple, isn't it? And what does it replace?

Somebody had to go and get the freezer out of the wood shed, or perhaps it was in the granary, or, oh yes, down at the school house where you left it after the picnic. Some one had to go to town for ice. Some one had to break the ice up fine in a burlap bag, and turn the crank for half an hour till the cream froze.

It was worth the effort when the cream was done, of course. Every one agrees on that. But it is easier to open the refrigerator door and turn a knob half way round a dial.

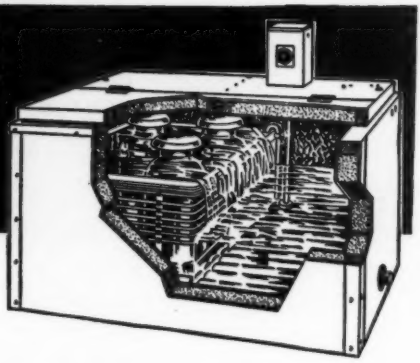
Since the biggest part of getting dinner is the cooking of it, you may well expect to find a good deal of attention given to making that job automatic.

On most electric ranges, I would be glad to believe it is all of them by this time, there is a dial that reads from 250 to 500. That is

(*Continued on page 20*)

"THAT'S A GREAT MILK COOLER . . . WOULDN'T BE IN BUSINESS WITHOUT IT. ONLY COSTS ME $1.67 PER MONTH TO OPERATE."

Says EBEN HAGGETT
MAINE



FATTEN UP

Your Monthly

MILK CHECK

The Esco "NI-AG-RA" Electric Milk Cooler gives you lower bacteria count and higher quality milk. This means no more rejections from improper cooling and more money for you each month.

The Esco "NI-AG-RA" pays for itself from the very start and its low operating cost will surprise you.

You get faster and better milk cooling because the patented Neck-High Water Leveler always keeps a constant level of icy water up around the neck of every can . . . whether one can, half or full capacity is in place. This constant level is maintained automatically . . . no valves to turn . . . no dummy cans needed. Works just like a waterfall.

You also get in the New Esco "NI-AG-RA" complete circulation and positive controlled agitation of the entire cold water bath. Cools *all* the milk in every can to 50° or lower in one hour or less . . . and then the Circulator-Agitator shuts off automatically. You have full storage capacity for both milkings.

6-can capacity . . . 3 cans of night milk . . . water is above milk level in all cans . . . all the milk to the very top of every can will be cooled to BELOW 50° IN AN HOUR, or less.

3 morning cans added (6 in all). Water level AUTOMATICALLY ADJUSTED. All milk cooled in one hour or less . . . and ready to ship.

READ WHAT THESE ESCO USERS SAY:

"Much to my surprise I am cooling my milk much more economically and more thoroughly than I ever believed possible. Anyone cooling milk should have an Esco 'NI-AG-RA'."—E. L. Harvey, Mass.

"The ESCO Electric Milk Cooler that you installed for me last year is most satisfactory. Even during the hot weather of August, it used only about 2c. worth of electricity per can of milk cooled."—Walter J. Seidel, Pa.

"*I have had no complaint from my milk in the two years* I have been using my ESCO 'NI-AG-RA' and would recommend this equipment to any man in the market for a milk cooler."—Peter J. Schappel, Pa.

ESCO

NO OTHER MILK COOLER HAS ALL THESE EXCLUSIVE FEATURES. That is why you owe it to yourself to SEE THE NEW ESCO "NI-AG-RA" before you buy your milk cooler.

WRITE TODAY. Send postal telling how many cans of milk you ship each day. We will send you complete information. Easy payment plan can be arranged.

ESCO CABINET COMPANY

576 E. BIDDLE STREET **WEST CHESTER, PA.**

ARE YOU READY for PRIN

Here Are Som ctorial

(1) Line's up. Colony houses o clean ground with plenty of gree feed handy. Light and heat b wire with no fuel or fire to handl

(2) The sack of soil at the righ is a counter-weight which jus balances the hover. This make it easy to raise and lower th brooder. Boards are used to con fine the chicks close to the hover As the chicks grow and learn the way in and out, the boards a moved back.

(3) A fan type hover. Note th small motor at the top of th brooder. It drives a fan whic forces fresh air down over th heating elements and into th hover.

(4) There is a growing tendenc to raise chicks on hardware clot for better sanitation. Dropping pass through the ½-inch scree floor which is made in sections fo ease in removing. This floor ma have soil heating cable attache to the under side of the screen t provide some supplemental he from below.

(5) Poul ards ha eep the way fro

(6) Mode oisted u et large

) Batte sed to roiler ba gg Facts adio on t irds qui oving al eeding.

) Clean ic brood ic vacuu W. H. D a. This clean a jure elec

) This h culation ith a suc controlle

for PRING BROODING?

Som ctorial Pointers

ses o 5) Poults have access to outside
gree ards having screen wire floors to
at b eep them off the ground and
andle way from the droppings.

righ 6) Modern electric brooder
jus oisted up out of way when chicks
make et large enough not to need heat.
er th
o con
hover 7) Battery brooders are often
n thei sed to start chicks. This is a
ls ar roiler battery at Murray Cauble's
gg Factory, Pekin, Indiana. The
dio on the ceiling helps keep the
irds quiet when workers are
te th oving about the room doing the
of th eding.
whic
er th
o th

8) Cleaning the inside of elec-
ric brooders with a small elec-
ric vacuum cleaner on the farm
f W. H. Densmore, R. 3, Roanoke,
a. This is a quick and easy way
clean a brooder and does not
jure electrical connections.

adenc
clot
pping
scre
ns fo
r ma
tache
een t
hea

9) This brooder has electric fan
rculation of air under the hover
ith a suction opening to take in
controlled amount of fresh air.

(1) The knob on the front of the roaster tunes in just the right amount of heat. (2) Set the pointer for faster freezing. (3) The dial in front of the switches controls the oven temperature. (4) The minute minder is below the clock on this modern range.

the temperature control for the oven. Behind it is a sensitive mechanism that turns the current on and off as the temperature rises and falls. It will keep a slow oven for you if you are baking fruit cakes, or give you a hot oven when you want biscuits.

You do not watch it, or worry about it, or help it. You just turn a switch and a pointer on the dial.

A clock that will turn the current on for you, and off again, too, if you like, makes it possible to set the dinner cooking when you are over at the school house for a PTA meeting or off in town for weekly shopping.

Dinner Cooked Automatically

After the dinner is in the oven, you turn the knob to the temperature you want, turn the switch on, and then set the clock to start cooking the food so it will be done for dinner.

To be sure you do have to peel the potatoes, make the pie, and stir up the pudding just the same, but it is worth a lot not to have to carry in wood, to coax the fire into going, and to keep it up throughout the baking.

Those jobs are gone from a modern electric kitchen. You get your heat for cooking, any heat you want, just by turning a switch, and you can set the fire to mind itself in the oven with the turn of a pointer on a dial.

Some electric ranges have a switch that will connect the timer not only with the oven, but with the well cooker, with one of the burners on top of the range, or with the appliance outlet as well. You don't have to get up to start breakfast with a range like that, not if you get it on the stove the night before. On busy days, you can get dinner ready and on the stove, then hurry on about your work. The range clock will do your worrying for you.

Time to start the pot roast? Time to start the potatoes? Time to steam the pudding?

Don't give it a thought. They've started to cook.

I don't suppose you ever do such a thing, but I sat right here at this very desk one day when I was working on a story about vacuum cleaners and let two loaves of bread rise up all over the kitchen. An alarm clock would have reminded me of that bread if I'd set it to call me in two or three hours.

Because some other women forget the jobs they've left behind them, men are building little alarm clocks into electric ranges. It will watch the minutes for you, an hour of them, anyway. You can set it to remind you to turn off the burner under the potatoes in ten minutes. You can set it again to ring in twenty minutes when they will be done. It will warn you to take out the cake or to watch the cookies. And you can ask it to time the beating of a frosting or the cooking of a three minute egg.

They call it a minute minder. Its little tinkling bell is a great help when you're busy at jobs that ask you to keep one eye on your work and another on the clock.

Cooking by radio? It hardly seems likely, does it? But that need not disappoint us, since already the machinery is here to mix and freeze and cook our food with very little help from us.

It isn't entirely automatic, but don't you think we have gone what my South Carolina friend calls a "fur piece" toward dialing for dinner?

(*Housekeeping Section continued on page* 22)

AC-DC $15

Standard Shaver for 110-volt current. Order specially for 6- or 32-volt current.

"It's given us an extra bathroom!"

FATHER, three grown sons and a daughter in a not-too-large house! All the males go to work at the same time. In the single bathroom they must all shave. Imagine the fussing, the confusion and the irritations that spoil a breakfast and ruin the day.

Then came the Schick Shaver—four of them, in fact. And now the boys shave in their bedrooms and a grateful mother writes an enthusiastic letter praising the Schick Shaver and adding: "It's given us an extra bathroom."

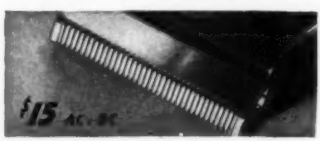
THE JOY OF "SHAVING ANYWHERE"

You can sit in a comfortable armchair and shave with a Schick. You do not need a light or a mirror. If you wear glasses, you can leave them on with no fear of splashed lenses, for you use neither soap nor water with the Schick Shaver. There are no blades—no sharp edges to cut you—no moving part can touch the skin, so shaving becomes a real joy instead of a dreaded nuisance.

ASK AN AUTHORIZED DEALER

A Schick dealer will show you the Shaver, explain how simply you can learn to shave quickly and closely and also shave in the most economical way possible.

THE SCHICK ALONE HAS THIS FLAT SHEARING HEAD



The flatness and extreme thinness of the outer plate of this shearing head, patented features, are vital to its shaving qualities.

SCHICK DRY SHAVER, INC., Stamford, Conn. Western Distributor: Edises, Inc., San Francisco. In Canada: Henry Birks & Sons, Ltd., and other leading stores.

Schick Dry Shaver, Inc., has no connection with the Magazine Repeating Razor Co., which manufactures and sells the Schick Injector Razor

SCHICK SHAVER

Pan Cakes

"But hark, I hear the pancake bell,
And fritters make a gallant smell."

A YEAR ago last fall we stopped one night at a pleasant home just outside Ithaca, New York. Besides giving rest to weary travellers, Mrs. Milks finds time to collect for her home lovely old furniture, Bennington jars, and many of the sturdy utensils that our great grandmothers used every day in keeping house.

Now my grandmother came from Massachusetts, and quite possibly her breakfast every morning of her childhood was poured from the snout of a batter jug. But she never thought to mention it. No batter jug came west with her from Great Barrington to Wisconsin, or having come, it did not survive till my arrival. So I had never seen one until we stepped into Mrs. Milks' living room that night.

What is more, I had never heard of one. But it was a case of love at first sight. In fact I had to take myself firmly in hand with the frequent admonishment,

"Thou shalt not covet thy neighbor's batter jug. Thou shalt not covet—"

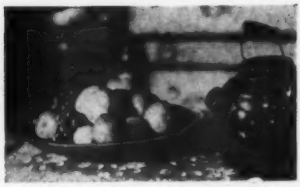
This lovely brown jug you see beside the wooden bowl filled with fruit, Mrs. Milks found in the cellar of a farm house far back in the hills beyond Lake Cayuga. The second one, the jug that stands ready for business at the right of the griddle is a more common type, and she found it at an auction, I believe. Women used to set the buckwheat batter at night and let it stand in the jug till morning. Mrs. Milks just mixes up her pancakes and uses the jug to pour them onto the griddle.

All the rest of our trip to New York and back home again we hunted batter jugs behind every ANTIQUES sign that marked the highway in

The griddle is hot and the batter is ready.

the region that batter jugs haunt. Of course we did not have access to anybody's cellar. We clenched our teeth and burrowed for batter jugs in cluttered shops, or smiled our blandest smiles and inquired for batter jugs of aloof and indifferent sales women.

I remember sadly a shop we passed in Stroudsburg, Pa., passed without stopping because it was



getting dark and it had begun to rain.

I still think that man might have had a squatty, brown batter jug with trefoil ears for the bail. I wish I knew.

Though batter jugs have become antiques, pancakes are just as popular as ever as far as I can see.

"I suppose you find that pancakes are pretty largely a winter dish," I suggested to a friend of mine, Mrs. Cora Bergstressor of the Wisconsin Public Service Company.

"Oh, no," she answered. "Folks really eat them all year round. Did I ever tell you about making pancakes for a Chicago family one summer a long time ago when I was just starting out on home economics work?"

12 LARGE POPOVERS

Prize Winning Letter for November

"Popovers are my favorites in the muffin group. To be sure they are nothing but a hollow shell, crisp and a lovely brown on the outside, but nevertheless delicious. They make a fine Sunday breakfast, as that seems to be the only morning we can eat with leisure and appreciation. Here's my recipe. I hope you will like it.

"Materials: Two eggs, 1 cup milk, 1 cup flour, 2 teaspoons melted butter, ½ teaspoon salt.

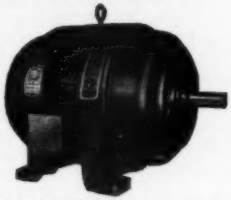
"Method: Grease pans thoroughly and put them in a hot oven until the fat begins to steam. In the meantime beat the eggs 2 minutes, add the milk and beat again. Sift the flour mixed with the salt and add to eggs and beat again 1 to 2 minutes. Lastly add the melted butter. Pour batter into the steaming hot tins, filling them half full. Place in a hot oven (425 degrees) for 35-45 minutes. When popovers are done they will pop over the sides and top of the pans about 2 to 3 inches. They will be a tempting brown. The secret in making popovers, no matter what kind of pan you use, iron or tin, is to have the pans piping hot before you put the batter in."

MISS SUSAN L. BROWN
R. D. No. 1
Walden, New York

F-M Water Systems

200 to 5000 gallons per hour

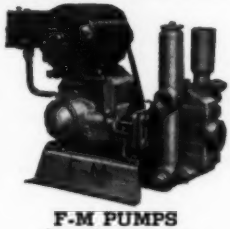
F-M MOTORS



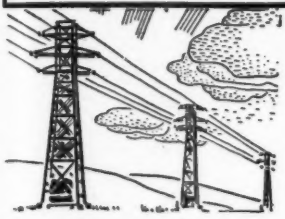
1/6 to 200 horsepower

F-M HAMMER MILLS

Fairday **Washers**



F-M PUMPS
for *all* purposes



The Browns Now Live on Easy Street

THE Browns live near a "high line"—just as you do. When that high line went in, a lot of drudgery for Mr. and Mrs. Brown went out.

The first thing they did was to wire the house and barn and put in a Fairbanks-Morse Water System. Now they have running water piped under pressure to kitchen and bathroom and to the barn. It's a wonderful convenience.

A Fairbanks-Morse Hammer Mill driven by an F-M motor makes easy work of what was once a tough job. A Fairday electric washer has taken the blues out of Blue Monday for Mrs. Brown. And you ought to see Brown's tool house now—F-M motor-driven drill press, saw, and tool grinder. Jobs that used to take half a day are now finished in an hour or less.

Why don't you move into Easy Street too? You'll be surprised how much you *save* and how much more you make now that you have electricity—the lowest cost "hired hand" on earth—to help you. You know your Fairbanks-Morse dealer. See him right away—and if you don't know him, you will find him a mighty personable sort of man to do business with. Write Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago, if you don't know his address.

When it's even too hot for a Hottentot, *COMFORTIZE* with Fairbanks - Morse air conditioners.

FAIRBANKS, MORSE & CO.

CHICAGO, ILL.

BRANCHES AND SERVICE STATIONS COVERING EVERY STATE IN THE UNION

"No," I answered, "but I'd love to have you."

"I went up into the lake region to cook for these folks to get some practical experience," Mrs. Bergstressor went on. "The first morning at breakfast I went in and asked Mrs. Ross how many pancakes to bake for her. She looked up at me indifferently.

"'I never eat more than three, sometimes not that'."

So she sent in three, Mrs. Bergstressor said.

But in a very few minutes the daughter came out into the kitchen and asked half apologetically, "Could mother have three more cakes?"

Then before the grease on the griddle was cool, back she came again, grinning.

"I'm sorry, but would it be too much trouble to cook mother just three more?"

"But I was not through even then," laughed Mrs. Bergstressor. "When Mr. Ross came down he ate eighteen without stopping, that is without stopping any longer than he had to while I baked another griddle full."

That looks as though a good pancake would never go begging on anybody's table, doesn't it?

Perhaps you've been looking for a recipe that will make a pancake light, tender and crisp, all at once. Here are two good ones Miss Garvin and her associates at Ohio State University include in their excellent cook book, "Cooking for Ohio Families."

This is a new griddle designed partciularly for use on an electric range. Miss Margaret Larsen, home economist for one of the stove companies, tells me you can use the griddle on a 1,750 watt burner, and that you start it on either high or medium, then when the griddle is hot, turn the switch to low for the entire baking, six or twenty-six pancakes. She says that the griddle keeps a uniform temperature way across so all the cakes are brown.

Sweet Milk Griddle Cakes

2¼ c. pastry flour or 2 c. family flour
4 t. tartrate or phosphate baking powder or 3 t. combination baking powder
½ t. salt
1 t. sugar
2 eggs
1½ c. milk
3 t. melted fat

Sour Milk Griddle Cakes

2 to 2¼ c. pastry flour
2 tsp. baking powder
½ to ¾ t. salt
1 t. soda
2 eggs well beaten
2 t. melted fat
2 cups clabbered milk or thick buttermilk

February Contest

The check this month goes to Miss Brown for her letter about popovers. An editor's life is "turrible hard" when it comes to sorting out one single recipe from dozens of good ones for Johnny cake and gingerbread, for muffins and bisciuts. We'll hear more about some of these later. I'll promise you that...

This month the contest letter is about "Unusual Uses for Electric Tools."

You know what I mean. Using the hose of the vacuum cleaner to clean the kitchen of flies when they have gone to sleep on the ceiling some cool evening. Turning on the fan to dry noodles cut in strips. Anything that will help all of us to get more use of the things we have.

Five dollars for the letter we print. Or regular editorial rates if your letter is used in later articles.

Send in your replies by February 20 to Gail Meredith, 1026 Seminole Highway, Madison, Wisconsin.

• • •

As GOOD as Its CORD

IF you have been keeping house electrically for any length of time, you are apt to have quite an array of cords hanging in your kitchen closet. It is a good thing to give them an inspection now and then.

I hope that every cord you have wears the bracelet that tells you it has been inspected and approved by the National Board of Fire Underwriters. This is a definite assurance of quality. It assures you that your cords are safe to use, that they are built for the appliance they came with, and if you give them good care, that they will give you long and satisfactory service.

Perhaps the first thing for you to do is check up on the way you are hanging these cords.

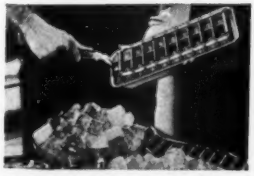
You know, I suppose, that the attachment cord is made up of fine copper wires which act as a part of the electric circuit, carrying the electricity from the metal they contact in the convenience outlet to the wiring of an appliance, then back to the convenience outlet again. These slender wires are wrapped with some material that protects them and insulates them from each other. They must not touch at any point.

If the wires are twisted or bent sharply back and forth, they may break off. The sharp ends will have a chance to poke through this covering and touch the neighboring wire. Because electricity always tries to get back to its starting point

NEVER BEFORE—Could Your Money Buy So Much G-E Refrigerator!!!

THE BEAUTIFUL NEW G-E REFRIGERATOR carries five years performance protection, a plan originated by General Electric. Today's models are by far the best refrigerator buys General Electric ever offered! There's no need now to take a second choice!

OIL COOLING. This feature of the sealed-in-steel General Electric Monitor Mechanism assures quieter operation, more cold with less current, and *enduring* economy.



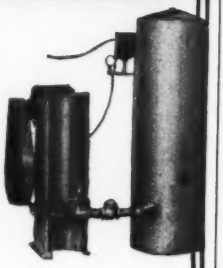
ALL THE ICE you'll want *in a hurry!* In models with six trays, 48 lbs. of ice can be frozen in 24 hours and the average current cost is *less than the price of ice!*

So *little* money buys so much G-E Refrigerator this year that practically every home can now afford this finest, thriftiest refrigeration service. The first choice of millions is now popularly priced! See the new 1938 General Electric models. They are roomier and have more convenience features than ever! And they'll save you three ways! Bigger dollar-for-dollar value—lower current cost—longer life!

GENERAL ELECTRIC CO., APPLIANCE DIVISION, NELA PARK, CLEVELAND, O.

GENERAL ELECTRIC

THE ORIGINAL ALL-STEEL REFRIGERATOR



Running Water, wherever you want it, at the turn of a faucet is the soundest kind of an investment for the farm. Not only does it enable you to live in greater comfort, but it actually pays its way by saving time and labor.

Besides, eliminating daily drudgery, it makes possible that spare time you have often wanted for rest and relaxation. Therefore, you live better and thus happier.

As a provider of running water an **Aermotor Electric Water System** is unequalled. You can depend on it because it's always on the job giving top-notch service. Built up to the highest standard instead of down to a price, it is a permanent investment.

No other water system offers you so many improvements and exclusive features. Before buying any outfit investigate the **Aermotor.**

SEND for this BOOK

AERMOTOR COMPANY,
2500 Roosevelt Road, E-2
Chicago, Illinois

I am interested in an **Aermotor Water System.** Send "Facts" Book.

Name.....

Address.....

Town..... State.....

by the shortest route it can, it pops across from one wire to the other.

This makes a short circuit.

No electricity will go along the cord to the lamp or the toaster, and quite likely, the fuse that protects that circuit will blow, stopping the flow of electricity before it has a chance to do more than sizzle a little and char the cover of the cord.

It is best to hang the cord in loose loops over a large smooth peg if possible. If you are hanging two or three of yours over a nail, you are bending them pretty sharply. Because I haven't a nice wooden peg myself, I hang my cords across two big coat-hooks set several inches apart. This seems to work very well.

Any rough usage will wear through the insulation of an attachment cord in time.

One simple protection you can give your cords is to grasp them by the plug instead of yanking at them anywhere. This will add years to their useful life.

If your check-up shows that some of your cords have frayed covers and loose plug connections, you had better have them repaired or discard them entirely. If the worn spot is near the end of the cord and a shorter cord will do, you can cut off the worn section and make a new connection—you, or your high school son who has laboratory work in electricity, or the service man down town.

Do something about them. They really can be a fire and accident hazard in your home.

Besides, while we may stick our tongue in our cheeks when we say that a man is only as old as he feels, we know from actual experience that an appliance is no better than its cord.

Hot Water Heaters for Dairies

HOT water in the dairy is essential to the sanitation program. Although chemical washes, soaps and powders are effective in reducing bacteria, scalding hot water for rinsing and washing is required for maximum cleanliness. Electric hot water heaters are preferred for the small dairy.

Thermostatic control on water heaters assures instant hot water at all times without attention and thorough insulation prevents undue heat losses during non-use periods. Electric heating is safer and it eliminates the fire hazard and the dust, smoke and fumes resulting from use of other heating equipment. Approximately three gallons of water can be heated to scalding temperatures for one kilowatt hour of electricity. Thirty gallon heaters, a size very popular with the wholesale producer, range between $50 and $70 in cost, 50 gallon units between $60 and $100. W. C. Krueger, *New Jersey Extension Service.*

AUNT JULIA (always a cynical old soul) says that some neighbors borrow so much that you feel more at home in their house than you do in your own!

"THE process of thinking draws the blood from the feet to the head," an educator informs. No doubt, this explains why, in many cases, if you think twice about something, you get cold feet.

I'M PROUD I AM A FARMER

ON THE AIR

Conducted by JEROME J. HENRY

Eddie's Idea of After Dinner Talk

YOU'VE got to be careful what you say when you are a dinner guest at the home of Nelson Eddy, baritone radio and movie star. Mr. Eddy has a lot of fun capturing the table talk on a concealed recording device. Then, at the conclusion of the dinner, he has the record played back, usually to the mortification of some diners and to the delight of those in on the secret.

• • •

Another Link to Chain of 13's

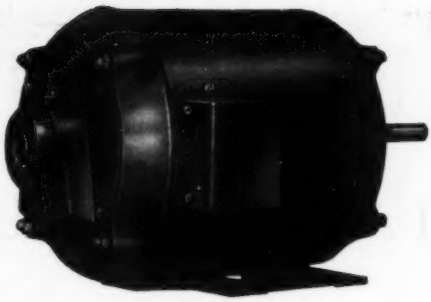
GERTRUDE BERG, authoress, producer, and main character of the Goldbergs series recently added another link to the amazing chain of 13's which are woven into the pattern of her career.

Mrs. Berg was first signed for a radio program on November 13, 1929, and the Rise of the Goldbergs was introduced to radio listeners. This fall she resumed the series on the 13th of a month. Following several months as a sustaining feature, the serial was first presented as a sponsored program on July 13, 1930. Four years later, on July 13, 1934, the Goldbergs began a personal appearance tour of vaudeville houses in the large cities.

Then came nine months of trouping, during which Mrs. Berg conceived and developed a new idea for a radio serial—The House of Glass. It was sold to a soap company on April 13, 1935. The Goldbergs were brought to the air again on January 13, 1936. They continued until June 13 of that year when Mrs. Berg decided to take a holiday after working steadily for eight years.

After a year's vacation Mrs. Berg went to Holly-

Parks Johnson and Wallace Butterworth of the Vox Pop programs. They interview persons on the street every Tuesday evening for the enjoyment of radio listeners.



WATER
When You Want It

When you want water—winter or summer—inside or outside—you get it, when you use pumps powered by Century Motors.

Century Repulsion Start Induction Motors are especially adapted to deep well pumping because it unfailingly supplies the torque—or turning effort at the motor shaft—necessary to handle the load. . . . Starting and stopping the motor may be controlled automatically by float switch, or by hand. . . . This is especially valuable during cold weather.

Enjoy the convenience and necessity of "Water When You Want It" — use Century Motors on your Pumps.

CENTURY ELECTRIC COMPANY
1806 Pine Street St. Louis, Mo.

Offices and Stock Points in Principal Cities

Century
MOTORS
UP TO 600 H. P.

wood and was signed to write a screen vehicle for Bobby Breen. "Make a Wish," her first movie effort, was completed on July 13, 1937, and on that day she was commissioned by RKO to write a second one. This, now completed is titled, "Streets of New York."

• • •

Radio Acting Not So Simple

IF you've ever wondered what was so hard about acting on the radio, you might get an idea or two from Paul Wing, who directs children's programs for the National Broadcasting Company. In the first place, Wing points out, the radio actor must always keep in mind the fact that his audience is an audience of blind persons.

He must recognize the need for a slightly accelerated tempo on the radio as compared with the stage and the need for keeping the show moving, without seeming to read his lines hurriedly. The radio actor must be very careful not to permit unexplained pauses to interrupt the flow of dialogue. A pause that would seem normal on the stage may stop a microphone drama dead in its tracks; the radio audience might think that the station was having mechanical troubles or had gone off the air.

On the other hand there have been radio pauses as long as 12 seconds. Of course, these are well constructed and explained and aid in the development of suspense.

The actor must learn to cultivate the art of projecting his personality through the use of his voice alone. He must know the varied transitions from one scene to another by the use of fade-ins and fade-outs and the effects possible through skillful use of the countless tricks of the microphone. Another bit of technique the radio actor must master is reading lines leading up to sound effects in such a way that the sound comes into the production naturally and convincingly.

• • •

Sound Man Has a Snap on This

THE phone rings and the door slams, but that's about all the noise that ever occurs on the Vic and Sade program. It's a snap for the sound effects expert assigned to the show.

This is true because when Paul Rhymer started the serial five years ago sound effects were pretty crude and hard to handle. So Rhymer wrote his episodes to get around the need for any of them except a few simple ones like ringing phones and banging doors. He simply dodged situations which would call for anything more complicated in the way of sound. Now, having got out of the habit of using effects, he doesn't feel that he needs them no matter how perfect they are today.

So Vic and Sade just get along with door slams and telephone tinklings. The telephone is almost indispensable to the program because it is one of the few means by which neighbors come into the script from "off stage." The neighbors, though they never appear, are important characters in the stories of the household. No one except Vic, Sade, and Rush has ever appeared in the show, but listeners to the program know half the town in which the family lives, by hearing about them in the conversations of Vic, Sade, and Rush.

DADDY'S BOUGHT A
DEMING
WATER
SYSTEM!
RUNNING WATER
YOUR FAMILY
DESERVES IT
MARVELETTE
YEARS OF
LOW COST
SERVICE
What a joy to any family to have running water at the turn of a faucet! And what a satisfaction to the head of the family to know that his Deming Water System will keep costs so low year after year! Before YOU purchase any other modern convenience, CHECK UP on a DEMING WATER SYSTEM! The complete line includes a correct type and capacity for every shallow and deep well requirement. The "MARVELETTE" illustrated above has a capacity of 250 gallons per hour. It's so quiet you can't hear it run! And it has many other features you would expect to find only in higher priced systems. Write for FREE illustrated catalog explaining everything about DEMING Shallow and Deep Well Water Systems. . . . Address
THE DEMING CO., 132 BROADWAY, SALEM, O.
DEMING
WATER SYSTEMS
57 YEARS OF DEPENDABILITY

TRUMBULL
All-Weather
ELECTRIC
BROODER
OUR PERFECTED 1938 BROODER
Gives all the usual advantages of electric brooding PLUS:
(1) More uniform distribution of heat over entire area covered by the Brooder. (2) Positive circulation of CLEAN air, correctly heated. (3) Least variation in vertical temperature — floor to chicks' backs.
Results in Better Grown, Heavier Birds—Lowest Electric Consumption
Write today for Free Bulletin 10008
The Trumbull Electric Mfg. Co.
1012 Woodford Ave.
Plainville, Conn.

Questions and Answers

Vacuum Drier for Fruits

Question: *Can you tell me where we can get information about vacuum type driers for fruits, meats and farm products?* H.B.B.

Answer: The U. S. Dept. of Agriculture has done much work on dehydration and has a number of bulletins on both home drying and commercial drying. The experiment stations of the University of California at Davis, and Oregon State College at Corvallis have information on the drying of prunes, nuts and hops.

Grinding Ear Corn

Question: *Could I grind ear corn economically with a hammer mill driven by a 5 h.p. motor as shown on p. 12 of your December issue? Could I adjust it easily to grind cobs?* E.R.J.

Answer: Yes, to both questions. Just remember, you can only do 5 h.p. of work with a 5 h.p. motor. The trouble is most people want to shovel it in with a scoop regardless of size. Mills of 5 h.p. will grind ear corn, cobs or even snapped corn but they must be fed slower, and more carefully and uniformly than the same mill with a larger motor. We know of no satisfactory, automatic feeder for ear corn, so the mills must be fed by hand. If you shell the corn, it can be fed into the mill from a spout and ground while you do chores. Hammer mills and shellers are made in sizes as small as ½ h.p. for this purpose.

Increasing Water Supply

Question: *Sometimes my dug well goes dry. It is connected by a 1½ inch pipe to my shallow well pump in the basement 40 feet away. Could I increase my water supply by driving one or more 2 inch well points near the dug well and connect them all to the suction pipe of my pump?* E.F.A.

Answer: You have two problems. If your large well goes dry, it is not likely that you could get additional water from points driven to the same depth as your well. Better deepen the well.

It is possible to connect several wells together to one suction pump and thus increase the area from which the water is collected. The perforations in the strainers of the driven well pipes and the open end of the pipe in the dug well should all be at the same level, and the piping should be arranged so that there is about the same length and same size of pipe from each well to the pump. Be sure that all pipe joints are tight and that the water level is not more than 20 feet below your pump.

Ask Any Butcher

"What is a dog pound?"
"Sixteen ounces of Frankfurter."

WESTCO—THE ORIGINAL TURBINE TYPE PUMP

For only a few cents a day you can have the protection, the sanitation, the convenience of a city dweller—with a WESTCO. It's the original turbine type pump with only ONE moving part, the impeller . . . nothing to get out of order . . . nothing to replace . . . that is why the WESTCO is the most economical pump you can own.

You'll never have to replace the casings because they are protected by the Patented Removable Bronze Liners.

Write today for new illustrated Water System catalog. It is FREE.

Disassembled view of WESTCO's Casings showing Patented Removable Liners and the Impeller, which is the pump's only moving part.

WESTCO GG-27 Storage Tank System. Tanks can be furnished in sizes from 12 to 530 gallons capacity and larger

MICRO-WESTCO, INC.

BETTENDORF IOWA

Branches in All Principal Cities

With the "Surging" Surge Milk Travels Only 4 inches INSTEAD of 4 feet!

The Surge Milker

is BEST Because:

● Only 4 inches instead of 4 feet to keep clean—easiest to keep clean—cleaner milk. ● It milks faster ● It gets more milk (less stripping). ● It milks all cows better—a light pull for an easy milker—a heavy pull for a hard milker and a progressively increasing pull on all cows as they are milked out. ● And now—all Stainless Steel! ● Write for the Free fascinating Surge Catalog, proof of superiority, Easy Monthly Terms Offer...and for Free details on the marvelous new Surge Cooler. (Please specify which.)

Write For "EASY MONTHLY TERMS" OFFER!

BABSON BROTHERS

2843 W. 19th Street
Dept. 5512 Chicago, Ill.

566 Spencer Street
Dept. 5512 Syracuse, N. Y.

9" x 3' SOUTH BEND LATHE

New Low Terms ONLY $6.00 A MONTH

Ask for FREE Catalog

$85 LESS MOTOR DRIVE

WRITE for details on this new 9" x 3' Workshop Precision Lathe, back geared, screw cutting. Made in 8 different drives, 4 bed lengths. 38 practical attachments available for use with this lathe. Weight 320 lbs. crated. Ask for catalog 15K—sent Free, Postpaid.

SOUTH BEND LATHE WORKS

327 E. Madison Street South Bend, Indiana, U. S. A.

MAKOMB ELECT-O-STAT

A GREAT ELECTRIC SINCE 1929

USES LESS CURRENT

Featuring — Electric Fan Equipment optional — perfect heat distribution—edge to edge insulation—steep, strong, rigid canopy—head room for big founts—heat saver ventilation—guaranteed switch and element. No room too cold. Sizes: 52" or 60" square. Write for details on these sensational brooders.

THE MAKOMB LINE 103 Madison Ave. Macomb, Ill.

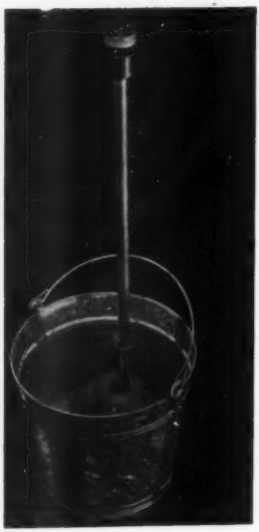
World's Largest Manufacturer of Brooders

Stock Tank Heater

(*Continued from page* 15)

so that the surface of the water can be protected during the night or during the cold days when the stock is under shelter.

The immersion type heater seems to be the answer to the stock tank water heater application. The standard 750 and 1,000 watt sizes are used in an assembly of standard pipe fittings and conduit. The bushing into which the heater is screwed is reverse tapped and the only precaution required in the assembly of this material is to have a few reverse twists in the wires so that when the final assembly is made the feeder wires will not be twisted off and shorted in the conduit. All the pipe threads and joints should be treated with a water-proof compound before assembling. The main heater should be grounded and fused for protection from possible shock to the animals or injury to the equipment.



This is a 1300 watt farm water heating unit which is being used by some farmers in their water tanks. The heat is all concentrated in the ring at the lower end. The handle extends up above the water level.

There are several types of thermostats including those used for hotbed circuits that can be used satisfactorily for controlling the current. The most economical and frequently used method of control is a simple snap switch. In operating this type of heater it is usually turned on during the night and off during the day except during severe winter when it may be necessary to leave the circuit on both day and night in order to prevent the tank from freezing over.

It is generally conceded that it costs less to heat drinking water with electricity than it does to heat he same water with high-priced feed concentrates, which are necessary when the dairy cow is required to heat her own water. If the tank can be located in the corner of a shelter shed or similar protection it will mean a saving on kilowatt hours and a more satisfactory installation of the water supply to the dairy herd.

Final Proof

'Is he a foreigner?"
"Yes. He was born in New York City."

I'M PROUD I AM A FARMER

Good Water for the Farm Pump

(*Continued from page* 11)

in the well, are important factors in the selection of the correct pumping equipment to be used. The drilled well is usually deep and reaches to the lower water levels. This, together with the steel casing, tends to exclude all surface water. Another advantage is that the well is usually drilled deep enough to insure an adequate supply of water the year around. The drilled well, on the other hand, offers the following disadvantages:

One, it is expensive to construct;

Two, the pumping equipment is relatively expensive to install and to operate;

Three, the pump head must be located directly over the well.

This involves extra expense in cold climates where protection from frost is necessary.

A drilled well, like a dug well, is considered deep or shallow, depending upon the minimum height of the water in the well, which in turn, affects the type of pump required. If the surface of the water is always 22 feet or less from the surface of the ground, it is termed a shallow well, and a shallow well pump can be used, although the well itself may be much deeper than this.

If a new well is being drilled or dug, it should be located, if possible, close to the house so that the pump can be installed in a pit connected directly with the basement or cellar of the house. This is especially important in cold locations as it gives an opportunity to service the pump, to prevent freezing, and it is also convenient. Where the well house cannot be located adjacent to the house, is will be necessary to build a pump house directly over the well and in cold sections this will have to be adequately protected from freezing.

Another source of water supply is from cisterns in which rain water is caught from roofs and stored, either in outside cisterns or cisterns in the basement or cellar. A cistern should be protected to prevent contamination. It should be constructed so that it can be readily cleaned and it should have a capacity to hold sufficient water for dry spells.

The advantage of the cistern as a water supply is that the water is soft; an advantage that every

(*Continued on page* 32)

It's a relief to know that your Uniflow Electric Pump can shoot a stream over your house and put out a blaze before it gets a start. That's a plus service that Uniflow's powerful water system provides. Plenty of water for production and plenty of pressure for fire protection. Let us tell you more about the Uniflow you need.

ONE OF
First
ELECTRIC PUMPS

Some good territories left for live-wire salesmen.

ELECTRIC REFRIGERATORS
UNIFLOW MFG. CO.
1503 EAST LAKE ROAD
ERIE, PENNSYLVANIA
MILK COOLERS
WATER SOFTENERS

Fastest, Finest Electric
COW CLIPPER
World-Famous
STEWART
CLIPMASTER

Preferred the world over for its greater speed, ease of handling, rugged, lasting durability.

Exclusive Stewart design ball-bearing motor is air cooled and entirely encased in the insulated EASY-GRIP handle that is barely two inches in diameter. Completely insulated—no ground wire required. The fastest clipping, coolest running, easiest-to-use clipper for cows, horses, dogs, mules, etc. Stays sharp longer. A $35 value for $17.95 complete. Slightly higher west of Denver. 100-120 volts. Special voltages slightly higher. At your dealer's or send $1.00 Pay balance on arrival. Send for FREE catalog of Stewart electric and hand-power Clipping and Shearing machines. Made and guaranteed by Chicago Flexible Shaft Company, 5524 Roosevelt Road, Chicago, Illinois. 48 years making Quality products.

Safer SEWAGE DISPOSAL

for your HOME or CAMP

Now, before you build or install new plumbing learn all about the safe disposal of sewage. A septic tank which is not dependable may be dangerous, costly, embarrassing. Don't risk dug-up lawns, or walls, furnishings and floors damaged by clogged drains. The San-Equip Master tank has exclusive features insuring safer and easier disposal. Lower installation cost.
Write today for complete information

SAN-EQUIP INC.
562 E. Brighton Ave.
Syracuse, N. Y.

San-Equip MASTER TANK

CUT Grinding Costs WITH THE STOVER FEED GRINDER

No. 75 Burr Type Mill

6 x 4" Pulley

Grinds small grains and shelled corn for ⅓ less than custom mills. Saves its cost the first year, feeding seven cattle. Practical, rugged, compact. Operates with electric motor or gasoline engine—1 to 5 H.P. Grinds up to 25 bu. per hour.

Send Post Card for Catalog

Grind your grain with a STOVER. Saves time, power and feed. Avoids waste and makes crops last until spring.

STOVER MFG. & ENGINE COMPANY
Department F-80 FREEPORT ILLINOIS

416 and 624 EGG ALL ELECTRIC

INCUBATORS

ON 30 DAY TRIAL

The Wilson All Electric is manufactured by one of the oldest incubator companies. It is guaranteed to be the most modern and scientific small incubator ever built. It has every advantage of the Mammoth now used by large hatcheries. Automatic air circulation, temperature, moisture control and egg turning device. No muss. No odor. No attention at night needed. Comes complete to plug in light socket. Low operating cost. Many thousands in use.

416 Egg Capacity only $54.50

Read these statements of users. "During the month of May, 1936, the Wilson gave us 88.49% hatchability and in June 92.6%," G. T. Klein, Poultryman, Mass. State College. "Received first hatch of 85%," Mrs. F. Cotterell, Mo. "93% hatch for 5 years," John Roder. "92% hatch of all fertile eggs," J. B. Leasure, Wetzeville, Mo. Full details on these users and many others in our FREE CATALOG.

624 EGG--$74.50

Write for prices on larger sizes.

Write for FREE Catalog

It gives full information and prices on 4 larger sizes Wilson All Electric's. 416 Egg Capacity to 3300 Egg Capacity. Write today. A Postcard will do.

LEAHY MFG. COMPANY

Dept. 112 **Higginsville, Mo.**

Free Information and Catalogs

Complete information about any equipment you are considering buying is yours for the asking.

But please give our advertisers first opportunity to answer your questions. They are particularly well equipped to serve you.

For any further information you need—use the handy coupon below—listing the applications on which you want further information.

FREE INFORMATION COUPON

ELECTRICITY ON THE FARM

Readers' Service Dept., 24 W. 40th St., New York

Without cost to me, please have manufacturers send complete information on the following Electrically Operated Equipment which I am thinking of buying:

.....

.....

.....

My name is .....

Address .....

I get electricity from .....

..... 2-38

housewife understands. The disadvantage is that dust and litter on the roof and in the eave troughs often color the water and produce an odor which is objectionable. The inlet to the cistern should be screened and equipped with a valve so that the first part of the rain may be kept out of the cistern until after the roof has been washed off. A filter of charcoal and sand, if it is properly cared for, will aid in removing both color and odors.

Directions for the construction of a filter and for the size of cistern to build, are given in Farmers' Bulletin 1448 U.S.D.A.

With the coming of electricity, automatic water systems can be used which will provide the country home with all the benefits of a city water service. Such a water system will return more real benefit for the money invested than any other similar investment one can make on a farm, and yet there are many farms where all the water for the house is carried in in pails and where stock must be turned out or driven to a distant creek to drink, simply because for some reason running water has not been installed. The old saying "You don't miss the water until the well runs dry" should read, "You don't appreciate running water until after you once have had it."

Sunshine at Night

(*Continued from page* 13)

flock and 19% of the untreated birds were in production. At the end of fifteen days, the figures were, respectively, 36 and 20 per cent. During the next fifteen days, the production of the treated birds rose to 47% while that of the other flock increased to 24 per cent. On the final day of the month, the irradiated birds showed a 56% production and the check flock 30 per cent.

The treated flock showed an average gain of over 33 eggs per day during January, while the other birds averaged an increase of only 4.7 eggs a day. At the prevailing wholesale price of fifteen cents a dozen, the increased financial return attributable to the use of the sun lamps was $11.10. Current consumption was 55 kilowatt-hours which, at the rate of 4½ cents, amounted to $2.48, leaving a net profit of $8.62 for the month.

During February, the production of the treated flock varied from 52 to 67%, while that of the other birds ranged from 30 to 48 per cent.

In addition to the greater egg production, the

treated flock showed a better physical appearance both during and after the test. Combs were more vivid, the birds were more active and looked better developed than those of the untreated flock.

From what has been said, it is apparent that ultra-violet lamps may be used to supplement cod-liver oil and will produce better results than using the latter alone. Where sufficient irradiation is supplied, cod-liver oil may be eliminated from the poultry diet with an appreciable saving. If the chick feed comes mixed with cod-liver oil, there is no harm in continuing this feeding and supplementing it with ultra-violet radiation. Since cod-liver oil is rich in vitamin A which is necessary in the poultry diet, it is desirable to continue it or use sun-cured alfalfa meal in the ration.

The use of ultra-violet lamps is justified only if profits are increased by them. So far as is known no tests have been made where the use of these lamps have been unprofitable. The net gain in income from increased egg production alone has been from 25 to 50 cents per hen per year, and this does not take into account the many other advantages enumerated.

Ultra-violet is not a cure-all. It will not perform any magic of suddenly transforming a sick or poorly bred flock into prize-winning high producers. It will not take the place of good stock, good feeding, good housing or attention to other details that go with good management. It is, however, a tool for the good poultryman who is willing to apply himself to his job in order to step out into that zone of profits which is always just a little ahead of the crowd.

Electric Pump Care

PUMPS located outdoors or in unheated buildings should have the oil changed and replaced with a winter grade of free running light oil. Heavy oils congeal and place a severe load on electric motors in cold weather, in some cases resulting in motors burning out. Exposed moving parts should be washed with kerosene to clear them of gummed oil and reconditioned with light oil. *New Jersey Extension Service.*

SAVE CHICKS
and cut fuel costs to as low as 6¢ a day

SEND FOR FREE FOLDER ON "WARNER" CHEAP ELECTRIC COLD BROODING OF CHICKS

Chicks and turkey poults live and grow *under the WARNER* in a way that some users term "a miracle!" They feather full and fast. They put on weight amazingly. Why? Cold brooding is the right principle. Infra-red Rays that gently pour around chicks improve the health and growth factors. For early spring brooding, with no added heat, the WARNER is your best and cheapest method. Ask your dealer to demonstrate. Best hatcheries sell the WARNER. If your dealer hasn't the WARNER, send postal for free folder and get the facts before you buy. Learn how to raise more and better chicks at lowest cost, safety and less work.

Ask your dealer to demonstrate or write to
THE NATIONAL IDEAL CO.
TOLEDO, OHIO

A SENSATIONAL 1 H.P. HAMMER MILL
Grinds All Small Grains and Roughages
Capacity to 1500 lbs. per hour.
Extremely Low Price
Also BURR MILLS
Write for Circulars and Prices
THE C. S. BELL CO.
23 McDowell St.
HILLSBORO, OHIO
Since 1858

NOW YOU CAN GET A HEAVY DUTY INDUSTRIAL WELDER
WORKS ON 110-VOLT Electric Light CIRCUIT
for Only $19.95 RETAIL

At this unheard of price, you can get this marvelous DYNAMIC Super-Charged Welder—this welder is a radical departure from accepted welding practices. It will do the work of much higher priced types—efficiently cooled—light of weight—easily portable. Will solder and braze on the lightest material. Works on iron, steel, tin, brass, copper and all other metals.
WELDS Cylinder Blocks, Bumpers, Fenders, Tanks, Farm Machinery...
With this Dynamic Super-Charged WELDER, a man without previous experience can make as much as $5.00 on a repair job that can be done in less than one hour. Many welding operators make as much as $15.00 - $20.00 a day—Go into business—Open a Welding Shop NOW.
AGENTS
Make big profits selling to garages, factories, janitors and machine shops. Write TODAY and ask for our 10-DAY TRIAL OFFER.
DYNAMIC WELDER COMPANY
2228-CW Silverton Road, Chicago, Illinois

Super-Heat ELECTRIC HOVER
Saves 25% to 30%
Broods big husky chicks
Here is the latest type of electric brooder . . . new method of Heat distribution . . . actually saves 25% to 30% electricity. Better Insulation . . . no waste of heat. Positive air circulation. Really today's best buy.
FREE FOLDER
on brooding chicks with electricity. See your local dealer or write Dept. 31.
ANDERSON BOX CO. Indianapolis, Ind.

Reviewed by T. E. HIENTON

Names and addresses of manufacturers of the articles described in this column will gladly be furnished upon request. Address your requests to What's New Department, ELECTRICITY ON THE FARM, *24 West 40th Street, New York, N. Y.*

Electric Brooder

Less labor, lower heating cost, reduced fire hazard, and easily regulated temperatures are several of the advantages which are reported by users of electric brooders. The constantly increasing number of electric brooders which are available affords those interested in such equipment a much wider selection than existed only a few years ago.

CLASSIFIED ADVERTISING

WRITE FOR BROWER'S New Big Supply Catalog and Poultry Guide. Shows largest line of poultry equipment in world; over 425 items; including Electric Fountains, Brooders, Incubators, Lighting Devices. Filled with poultry information. Low prices—Big Savings—Write today. BROWER MFG. CO., Dept. N30, Quincy, Ill.

FREE CATALOG OF LARGEST ALL-ELECTRIC poultry equipment line. Contains valuable check chart for prospective brooder purchasers. Helps to protect your chicks and profits by describing ALL electric brooder requirements. Proper size, wattage, ventilation, etc., must be considered for satisfaction. Write today to LYON ELECTRIC CO., Dept. EF, San Diego, Calif.

PATENTS SECURED—My PERSONAL service assures prompt action, strict confidence, and a minimum of expense on all your patent problems. Write today for your copy of my 72-page booklet and valuable "Record of Invention" form—both FREE. Registered Patent Attorney, L. F. Randolph, 756 Victor Building, Washington, D. C.

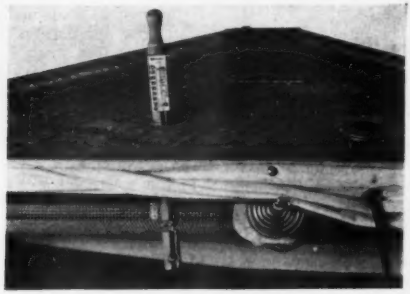
HAVE YOU A SOUND, PRACTICAL INVENTION for sale, either patented or unpatented? New ideas can now be safely sold without patenting expense. We have been successfully helping others since 1924. Write for proof and tell us what you have for sale. CHARTERED INSTITUTE OF AMERICAN INVENTORS, Dept. 108, Washington, D. C.

RAISE GIANT FROGS! WE BUY! Good prices year 'round! Get ready now for next spawn. Breeder lays 10,000 eggs yearly. Small pond starts you. Free book shows sketch. AMERICAN FROG CANNING CO. (162-B) New Orleans, Louisiana.

MAKE MONEY WITH POULTRY. Read America's biggest poultry magazine. $1000 cash prizes to chick raisers. Learn how leading poultry raisers succeed. Only poultry magazine operating its own experimental farm. Three years $1.00; 9 month's trial, 25c. POULTRY TRIBUNE, Dept. C-53, Mount Morris, Ill.

WRITE FOR FREE COPY of Bussey's Book for Poultrymen. Low prices on parts for electric brooders and batteries. Complete heating assembly—factory price only $2.45. BUSSEY PEN PRODUCTS COMPANY, 5151 West 65th Street, Chicago, Illinois.

A completely new electric brooder was recently announced by a well known manufacturer of electric incubators. This brooder, of rectangular construction, is made in two sizes. The smaller



size is 36 by 60 inches with a rated capacity of up to 300 chicks. The larger size is 48 by 72 inches with rating of up to 500 chicks. A chrome-plated reflector is placed back of the heater coil to direct the heat downward and outward. Legs are adjustable to aid in raising and lowering the brooder.

Fractional Horsepower Motor Book

Recent developments in electric motors are of interest to farmers whether they have been employing these electric horses for twenty-five years or only that many days. The uses of motors on farms are so varied and conditions under which motors work may be so different that the purchaser of electric motors for farm use must know the common types and their characteristics.

A very recent book describing fractional horsepower motors, their characteristics and applications, has been issued by a leading manufacturer of such motors. This 24-page book presents information concerning the electrical characteristics of five types of single-phase motors, as well as two- and three-phase motors and two types of direct current motors.

Like Paper Bottles

DELIVERING the milk from its herd to consumers in paper bottles over a period of time, the University of Illinois found that consumers preferred paper bottles to glass bottles. A saving of 2½c a quart in retail deliveries and of 1c a quart in wholesale deliveries was effected.

Hoards' Dairyman.